

CLAIMS

WHAT IS CLAIMED IS:

1. A process for producing a high-purity terephthalic acid, which comprises a mother liquor displacement for continuously converting a slurry of crude terephthalic acid crystals in an acetic acid solvent, which are produced by a liquid-phase oxidation of p-alkylbenzene in the acetic acid solvent, into a slurry in water as a dispersion medium, and a subsequent catalytic hydrogenation of the slurry in water, wherein the mother liquor displacement comprises:

10 introducing the acetic acid solvent slurry into a column from an upper portion thereof, the column being equipped with a central shaft having a plurality of stirring blades along a vertical direction thereof;

allowing the crude terephthalic acid crystals to sediment to form a high-concentration zone of terephthalic acid crystals in the column;

15 introducing a displacing water into the column from a bottom portion thereof so as to form an upward flow of water in the column while forming circular flows in the high-concentration zone by rotation of the stirring blades, thereby bringing the terephthalic acid crystals into counter-current contact with the upward flow of water; and

20 discharging the terephthalic acid crystals together with the displacing water from a bottom portion of the column, while simultaneously taking the acetic acid solvent out of a portion of the column which is disposed above a feed portion for introducing the acetic acid solvent slurry.

2. The process according to claim 1, wherein an average concentration of solids in the high-concentration zone formed in the column is 15 to 50% by volume.